

RECEIVED
CENTRAL FAX CENTER

JUN 12 2008

In the claims:

Please cancel claims 1 through 7 and 11 through 20.

8. (Currently Amended) ~~The method of claim 7 wherein the unused bandwidth of the queues is managed in a "free" "bucket" to be available for allocation to other queues that can utilize the same, thereby to insure the full capacity utilization of the link and without wasting bandwidth. A data packet traffic managing method of providing adaptive bandwidth management and scheduling to a variable length data packet switch/router system in a converged network environment that receives different types of data packet traffic flows having different specific customer-assigned service requirements such as including definition of service, priority, delay, jitter and bandwidth characteristics, and for routing the data packet flow to a common communication link for simultaneous transmission flow along the common link, the method comprising, allocating different amounts or percentages of bandwidth to each type of data packet traffic in accordance with its respective customer-assigned service requirements; and scheduling the departure order of the different types of traffic flows from the router to the communication link based upon and adapted to said respective service requirements, and with preservation of the respective various traffic characteristics and priorities, whereby the switch/router provides differentiated services for the various data traffic types flows, while simultaneously substantially filling the total data packet flow capacity utilization of the link; and wherein the~~

different data packet traffic is routed to corresponding egress queues, the bandwidth allocating selects the amounts of bandwidth assigned to each of the queues determining how much data should be released from each queue, and the scheduling, independently of the bandwidth allocating, selects the order or priority of data packet release from the queues to the common communication link, wherein the presence of data in each queue is sensed and indicated to the traffic managing for enabling awareness as to the presence of data in the queue, and wherein, in accordance with such sensing and awareness, unused or "free" bandwidth allocated to but not used in a queue, is made available for use by another queue that has more data to send than its allocated bandwidth will permit; and wherein the unused bandwidth of the queues is managed in a "free" "bucket" to be available for allocation to other queues that can utilize the same, thereby to insure the full capacity utilization of the link and without wasting bandwidth.

9. (Original) The method of claim 8 wherein the making available of "free" bandwidth from one queue to another queue that can utilize the same, is effected without crediting or debiting any queue.

10. (Original) The method of claim 9 wherein each queue is provided with a base weight system and counter to enable users to control the percentage of "free" bandwidth distributed in the different queues, with the "free" bandwidth managing making assignment to a queue based upon such weights, the amount of data present in queue memory, and on the "free" bandwidth available.

21. (Currently Amended) ~~The apparatus of claim 20 wherein means is provided for accomodating the unused bandwidth of the queues in a "free" "bucket" to be available for allocation to other queues that can utilize the same, thereby to insure the full capacity utilization of the link and without wasting bandwidth. In a system for variable length data packet traffic flow, a configurable adaptive bandwidth management and scheduling apparatus for a data packet switch/router system in a converged network environment for receiving different types of data packet traffic flows, said apparatus having, in combination, means for receiving the different types of data packets with respective different specific customer-assigned service requirements such as including definition of service, priority, delay, jitter and bandwidth characteristics, to be routed to a common communication link for simultaneous transmission flow therealong; bandwidth allocation means for allocating different amounts or percentages of bandwidth to each type of data packet traffic flow in accordance with its respective customer-assigned service requirements; means for scheduling the departure order of the different types of traffic flows from the router to the communication link based upon and adapted to said respective service requirements; and means for preserving the respective various traffic characteristics and priorities for each different type of data packet traffic flow, whereby the switch/router provides differentiated services for the various data traffic flows, while simultaneously substantially filling the total data packet flow capacity utilization of the link; and wherein the different data packet traffic is routed to corresponding egress~~

queues and, the bandwidth allocating means selects the amounts of bandwidth assigned to each of the queues, determining how much data should be released from each queue, and the scheduling means, independently of the bandwidth allocating, selects the order or priority of data packet release from the queues to the common communication link; and wherein means is provided for sensing the presence of data in each queue and indicating the same for enabling awareness as to the presence of data in the queue; and wherein means is provided, operable in accordance with such sensing and awareness for making unused or "free" bandwidth allocated to but not used in a queue, available for use by another queue that has more data to send than its allocated bandwidth will permit; and wherein means is provided for accommodating the unused bandwidth of the queues in a "free" bucket" to be available for allocation to other queues that can utilize the same, thereby to insure the full capacity utilization of the link and without wasting bandwidth.

22. (Original) The apparatus of claim 21 wherein the making available of "free" bandwidth from one queue to another queue that can utilize the same, is effected without crediting or debiting any queue.

23. (Original) The apparatus of claim 22 wherein each queue is provided with a base weight system and counter to enable users to control the percentage of "free" bandwidth distributed in the different queues, with the "free" bandwidth allocation means making assignment to a queue based upon such weights, the amount of data present in queue memory, and on the "free" bandwidth available.